REMARKS

This Application has been carefully reviewed in light of the non-final office action mailed August 19, 2009. At the time of this August 19, 2009 non-final office action, claims 1-12 were pending. In the August 19, 2009 non-final office action, Examiner rejected claims 1-12 under 35 USC § 103(a). The Applicants respectfully request reconsideration and favorable action in this case, allowing all of the pending claims based upon the remarks and amendments herein.

Examiner rejected Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Crinion et al., U.S. Patent No. 6,181,699 ("Crinion") in view of Hussain et al., U.S. Patent No. 7,161,904 ("Hussain"). Claims 1 and 2 are independent claims.

Claims 1 and 2 were previously amended to more precisely reflect the inventive structural relationship between the components of the switching device and data link layer processor.

The inventive switching device comprises a plurality of physical layer interfaces for transmitting frames to a communication network, a network processor for routing the frames towards the physical layer interfaces and a traffic shaper.

The inventive switching device is characterized by a plurality of network access modules, wherein each of said network access modules comprises a data link layer processor, wherein each data link layer processor comprises: a plurality of media access controllers, wherein each media access controller is operatively coupled to a physical layer interface, and

characterized in that said traffic shaper is operatively coupled to said media access controllers for discarding one or more frames from the network processor that exceed one or more bandwidth parameters prior to transmission to the media access controllers.

A particular advantage of this inventive switching device is based on the plurality of network access modules which are assigned to the network processor. Since each of the access modules itself comprises a plurality of media access controllers having a dedicated physical layer interface, a large number of physical connections to further networks or network elements, respectively, can be dealt with by the inventive switching device under control of a single network processor.

Even more advantageous is the fact that each of the inventive access modules comprises its own data link layer processor which makes possible various kinds of pre-processing and/or post-processing of frames that would otherwise have to be processed by the single network processor.

This inventive structure of the switching device enables an ability to simultaneously handle a large number of physical connections while not requiring the single network processor to handle every frame being processed. Certain frames may be discarded on the access modules' level by the data link layer processor of a respective access module, and thus do not impose an additional burden onto the network processor. Hence, the inventive structure is ideally suited to implement over- subscription techniques, because in many cases, the network processor is effectively protected from actual overload conditions.

Yet a further advantage of the inventive structure is based on the fact that the plurality of access modules allows for defining individual policies or processing rules for all the media access controllers assigned to a specific access module, while media access controllers assigned to a further access module may operate according to different rules.

In the August 19, 2009 non-final office action, Examiner asserts that Crinion discloses "a switching device comprising a plurality of physical layer interfaces for transmitting frames to a communication network" and "a plurality of network access modules, wherein each of said network access modules comprises a data link layer processor, wherein each data link layer processor comprises: a plurality of media access controllers, wherein each media access controller is operatively coupled to a physical layer interface," citing FIG. 8 and col. 8, lines 17-37 and col. 5, lines 66-67 and col. 6, line 66-col. 7, line 3.

Crinion fails to disclose "a plurality of network access modules, wherein each of said network access modules comprises a data link layer processor, wherein each data link layer processor comprises: a plurality of media access controllers, wherein each media access controller is operatively coupled to a physical layer interface." Instead, Crinion merely discloses a switching device (200a of FIG. 8) capable of transmitting frames to a communication network via a plurality of ports (210a/211a). There is no disclosure of a plurality of media access controllers and there is no discussion of each media access controller being operatively coupled to a separate physical layer interface as shown in FIG.

8 of the present invention. Hence, the ports of Crinion are not the equivalent of the access modules of the present invention.

Regarding the rejections of claims 3-12, as these claims depend either directly or indirectly from independent claim 2, and therefore incorporate all of the limitations therein, for the reasons set forth above with respect to independent claim 2, Applicants respectfully assert that these claims are also patentable over the cited references.

Claim 3 has also been amended to explicitly recite that each of the plurality of media access controllers is operatively coupled to a separate physical layer interface. This provides an additional ground for patentability of this claim and any claim depending therefrom.

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Serial No.: 10/751,099
Examiner: Kyung H. Shin

CONCLUSION

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for reasons clearly apparent, Applicants respectfully request full allowance of all pending claims. If there are any matters that can be discussed by telephone to further the prosecution of this Application, Applicants invite the Examiner to contact the undersigned attorney at 512-306-8533 at the Examiner's convenience.

Respectfully submitted,

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